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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,799	11/20/2001	Sheng-Guo Wang		1612

7590 07/26/2006  
Dr. Sheng-Guo Wang  
2516 Radrick Ln  
Charlotte, NC 28262

EXAMINER
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VINCENT, SEAN E

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/989,799

Applicant(s)

WANG, SHENG-GUO

Examiner

Sean E. Vincent

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21, 22, 24-26 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-39 is/are allowed.
- 6) ☒ Claim(s) 21, 22 and 24-26 is/are rejected.
- 7) ☐ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 10, 2006 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 21, 22 and 24-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.
5. Claim 21 is indefinite because line 5 states "heating and melting said preform for said optical fiber". A clearer statement within the context of the claim would be "heating and melting said preform" ("for said optical fiber" should be deleted). Note that method claims should be written in positive step action format wherein each method step acts on the material or product made by the previous method step until the final product is complete.

Art Unit: 1731

6. Claim 26 is indefinite because line 3 states “heating and melting a preform in a furnace for the optical fiber”. A clearer statement within the context of the claim would be “heating and melting a preform in a furnace” (“for the optical fiber” should be deleted). Note that method claims should be written in positive step action format wherein each method step acts on the material or product made by the previous method step until the final product is complete.
7. Claim 26 recites the limitation "the coating" in line 7. There is insufficient antecedent basis for this limitation in the claim. Line 6 has a description of the fiber “before coating”, but no coating method step exists in the claim.
8. Claim 26 recites the limitation "all these measurement devices" in line 14. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 26 is further indefinite because lines 4 and 5 read “while heating and melting, drawing said optical fiber from said preform to form said optical fiber”. The claimed method step is redundant since optical fiber is made twice. A clearer statement would be “while heating and melting, drawing said preform to form an optical fiber”.
10. Claim 26, line 20 is unclear because “calculates” should be “calculating”, otherwise the tense of the claim is inconsistent and reads as though a separate process is being conducted alongside the first claimed process.
11. Claim 26, line 23 is unclear because “controls” should be “controlling”, otherwise the tense of the claim is inconsistent and reads as though a separate process is being conducted alongside the first claimed process.

***Allowable Subject Matter***

12. Claims 37-39 are allowed.

13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or fairly suggest methods of controlling optical fiber drawing as claimed wherein feeding speed and drawing speed are adjusted according to control signals generated from calculated deviations of preform diameter, first fiber diameter and second fiber diameter measurements from preselected diameter values as claimed.

***Claim Rejections - 35 USC § 103***

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 21, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harding (US 4793840) in view of Yamamura et al (US 6220057).

16. Harding taught methods of controlling an optical fiber drawing process wherein a preform was fed at a feeding speed, the preform was heated and melted in a furnace, a fiber was drawn at a drawing speed from the preform, the diameter of the fiber was measured below the furnace, the measurement was provided to a control system and the control system controlled the feeding speed and the drawing speed based on the measurement (see col. 2, line 7 to col. 3, line 20 as well as the abstract, claims and figure).

17. Note that the examiner must always give the claims the broadest reasonable interpretation when applying the prior art. In this case, the examiner will give "robustly controlled" a broad interpretation based on the common meaning of 'robust' since the applicant did not provide a

Art Unit: 1731

more limiting definition of "robust". It is the position of the examiner that "robustly controlled" reads on the long term and short term control discussed by col. 3, lines 13-20 of Harding.

18. Harding did not teach measuring the preform diameter or shape. Yamamura et al taught methods of drawing glass preforms wherein the diameter of the preform was measured before it was heated and drawn (see col. 2, line 40 to col. 3, line 14 as well as the abstract, claims and figures). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure preform diameter before heating and drawing in the method of Harding because Yamamura et al taught that it would have enabled individual heater control and obviate the need for subsequent diameter correction (see col. 1, line 54 to col. 2, line 2).

19. Note that even though the combination of Harding with Yamamura et al is motivated by the use of preform diameter for temperature control instead of for feeding and drawing speed control, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

20. Harding did not teach that the optical fiber measurement was to take place at a position where shrinkage of the fiber was not larger than a predetermined allowable diameter deviation. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to measure the fiber diameter as claimed because a person of skill in the art would have been motivated to choose a measurement location where the diameter had stabilized.

21. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harding in view of Sumimoto (JP 06-206734 using the English language abstract and the translation already of record in the file).

22. Harding taught methods of controlling an optical fiber drawing process wherein a preform was fed at a feeding speed, the preform was heated and melted in a furnace, a fiber was drawn at a drawing speed from the preform, the diameter of the fiber was measured below the furnace, the fiber was coated, the measurement was provided to a control system and the control system controlled the feeding speed and the drawing speed based on the measurement (see col. 2, line 7 to col. 3, line 20 as well as the abstract, claims and figure).

23. Note that the examiner must always give the claims the broadest reasonable interpretation when applying the prior art. In this case, the examiner will give “robustly controlled” a broad interpretation based on the common meaning of “robust” since the applicant did not provide a more limiting definition of “robust”. It is the position of the examiner that “robustly controlled” reads on the long term and short term control discussed by col. 3, lines 13-20 of Harding.

24. Harding did not teach measuring the optical fiber at two or more different locations before coating the fiber. Sumimoto taught similar methods of controlling glass fiber drawing and coating wherein a first and a second outer diameter measurement was taken before the fiber was coated (see claims 1-4, the abstract, [0010] to [0013] and [0016] to [0018]). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a second fiber diameter measurement into the process of Harding because Sumimoto taught that it would have reduced the time necessary for increasing the drawing speed and the loss of preform or fiber would have been minimized.

Art Unit: 1731

***Response to Arguments***

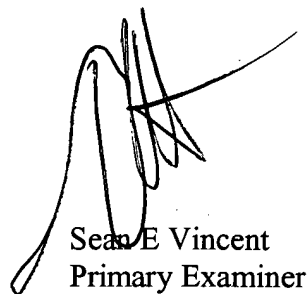
25. Applicant's arguments with respect to claims 21, 22 and 24-26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Vincent whose telephone number is (571) 272-1194. The examiner can normally be reached on M - F (8:30 - 6:00).

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sean E Vincent  
Primary Examiner  
Art Unit 1731

SVincent  
July 21, 2006